Port Programs Related to Air Quality Improvement

Presented by

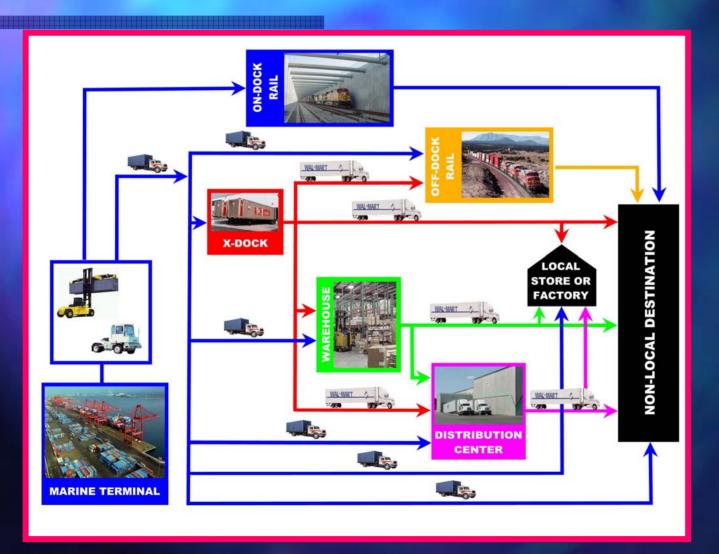
Robert Kanter, Ph.D.

Director of Planning and Environmental
Affairs





Trade and Goods Movement





Sources and Challenges



Target Pollutants: NO_x & PM

- NO_x Nitrogen Oxides: An ozone precursor that significantly contributes to smog.
- Particulate Matter: PM₁₀ Microscopic particles that includes soot from diesel exhaust. Toxic air contaminant.
- The South Coast Air basin exceeds Federal Air Quality Standards for both ozone and particulate matter.



Vessels



Smoke Stack Emission Reduction

Program

- Particulates from smoke stack blows when engine started up
- Complaints/Damage from fallout
- Education/Outreach to vessel masters
- Training security personnel and AQMD reporting







Vessel Speed Reduction Program

- Goal reduce NOx from transiting vessels
- Voluntary-MOU with Ports, Regulatory, MAREX, PMSA, SASC
- Currently ~50% participation
- ~1 ton/day current reduction





Vessel Retrofit Demonstration Project

- Retrofit demonstration project on existing vessel
- Maritime Working Group-CARB, EPA, Ports, Vessel operator
- Goal-NOx and PM reduction
- Fuel emulsification prior to injection





POLB Shoreside Electrical Power

- Voluntary program with BP/POLB
- POLB make shore side improvements
- BP to retrofit at least two vessels
- Minimum of 120 calls over 10 years
- BP responsible for all Operational costs
- Future terminal projects will require cold ironing through the lease





Terminal and Landside Equipment



Retrofit of Tenant's Diesel Equipment & use of Alternative Fuel



Awards





A RESOLUTION OF CONGRES OMAN JUANITA MILLENDER-MCDONALD

HONORING THE PORT OF LONG BEACH

Whereas, the Port of Long Beach has completed the task of retrofitting all port equipment with new technology to reduce diesel emission; and

Whereas, the completion of this project will improve air quality in the Port and throughout Long Beach; and

Whereas, this retrofitting project places the Port ahead of current state and federal standards for emissions; and

Whereas, the Port continues to demonstrate its concern for the environment and the itizens of Long Beach through its Green Port/Health Harbor Program; and

Whereas, seven terminal operators have voluntarily participated in this Diesel missions Reduction Program;

Therefore be it resolved by United States Representative Juanita Millendertulations be extended toward the Port of hat participated in the Diesel Emissions

Dated this 14th day of APRIL, 2005

JUANITA MILLENDER-McDONALD Member of Congress



2005 ENVIRONMENTAL AWARD Outstanding Achievement

U.S. Environmental Protection Agency Region IX Arizona, California, Hawaii, Nevada and Pacific Islands



Other Terminal Related Measures

- Container cranes electrified
- Many LPG forklifts
- O₂ Diesel being used in selected pieces of equipment
- Electric dredges or dredges using emulsified diesel
- ULSD in construction equipment



On Road Vehicles



Port Owned Equipment

- Port owned and operated equipment limited
- "Practice what we preach"
- Use fleet vehicles with alternative fuels
- CNG & hybrid Security cars
- Vacuum & LPG street sweepers
- O₂ Diesel for heavy duty equipment







Gateway Cities Fleet Modernization Program

POLB and Cities teamed up

 Incentives average \$25,000 per truck

 Owner pays about one third of total truck cost

- Old truck engine and chassis are <u>permanently</u> destroyed
- Trucker saves about \$1700 per year in fuel costs
- Typical replacement truck emits about 50% less NOx and 85% less PM



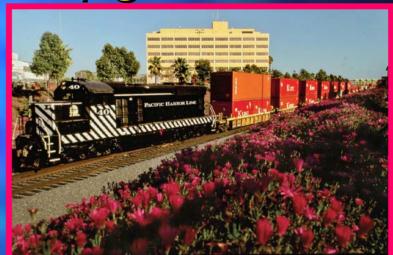


Locomotives



Locomotive Fleet Upgrade

- PHL operates locomotives in Ports
- New Agreement will replace all old locomotives with much cleaner Tier II engines
- Includes Green Goat (hybrid) and LNG engines as part of fleet
- Future engine purchases equal to/or cleaner (e.g. Tier III)
- Run emulsified diesel and DOCs







Important Miscellaneous Air Related Efforts

- Emissions inventory of Port sources
- Requirement for all construction equipment to use ultra low sulphur diesel
- Grade separations (including Alameda Corridor) eliminate idling and reduce emissions
- On-dock railyard eliminates drayage trips
- LNG Demonstration project
- Ratify Marpol Annex VI



Future Efforts

- Create incentives to "cold iron" vessels
- Improve participation in the vessel speed reduction program
- Develop strategies to reduce Port truck trips
- Infrastructure/Efficiency Strategies
- SECA Designation Support
- Lease Strategies (e.g. fleet turnover/alt fuels)





